



CONFERENCE REPORT

11<sup>th</sup> November 2023

Glasgow Grosvenor Hotel

The Scottish Women's Convention  
**STEMinism: What Needs to  
Change to Keep Women in  
STEM?**



# Agnes Tolmie

## SWC Chair

According to UCAS (Universities and Colleges Admissions Services) data, roughly 35% of STEM students in higher education in the UK were women, and despite progress in this area, women's increased representation in STEM is not reflected in the job market. Men employed in the STEM industry were twice as likely to be in managerial positions than women STEM graduates. Women who enter STEM were more likely to work as health professionals, with women STEM graduates from all four STEM subject areas being more likely to enter healthcare than men graduates. However, we regularly hear of shortages in skills across these sectors, such as engineers or technicians, so understanding why women are leaving this market is of the utmost importance for the Scottish economy, as well as women's economic participation.

I believe that the speakers today can shed some light on how we can keep women in the STEM labour market, as we all have a responsibility to our younger women to ensure that their lives are better.

## 5 Key Points & Recommendations

- Encourage all workplaces to have good quality childcare arrangements, for example through the use of creches or suitable flexible working patterns for parents.
- Increase parity between both parents' maternity/paternity leave, by increasing both length of time away from work and pay.
- Reconfigure high school timetables to create a collaborative working environment for young women across subject areas, while also providing better quality careers guidance.
- Tackle misogynistic behaviour within workplaces through comprehensive educational materials and training.
- Urge workplaces and academia to put in place policies which aim to increase the number of women in decision-making and high profile positions.

# Jenny Gilruth, MSP

Originally from Fife, Jenny Gilruth, MSP was elected in 2016 to represent the Mid Fife and Glenrothes Constituency. In 2023 she was selected to serve as the Cabinet Secretary for Education and Skills, and prior to this post has held the positions of Minister for Europe and International Development, Minister for Culture, Europe and International Development and Minister for Transport. Before her time in elected office, the Cabinet Secretary worked for over a year in education.



Our first speaker was the Cabinet Secretary for Education and Skills, Jenny Gilruth, MSP. Jenny opened by providing her experience as a woman in a decision-making position, and how she believed the misogyny faced by herself and fellow women politicians, had a direct impact on women in STEM. She highlighted her time as Minister for Transport, where she faced continual harassment, going on to state that her two male predecessors had escaped similar critique. Jenny accounted this to misogyny and preconceived stereotypes which prevent women from succeeding across society.

- **“But I was a woman, so I wasn’t qualified, and the number of emails I received from men asking me about my qualifications was really staggering”**

She felt that this was particularly prevalent across STEM industries, explaining that these aforementioned stereotypes begin at an early age, and as such more work has to be focused on empowering children to do what they want, rather than what they ‘should’ do as determined by society. The Cabinet Secretary went on to state that this can impact professional development, with the number of STEM apprenticeships offered to girls being low. To combat these statistics Jenny looked to efforts made across political parties, such as the Labour Party’s 50/50 lists and the all-women shortlists of the SNP, believing that the Scottish Government had to work with organisations to increase representation. She also highlighted the work of Education Scotland, where gender equality officers tackle stereotypes and the gender divide.

- **“...opinions and attitudes about who should do which job, those stereotypes start from a young age. You only need to look at a local toy shop to see how distinctive that division can be.”**

This was also discussed in relation to high school education, with Jenny explaining that a lack of role models for girls repeatedly perpetuates a cycle of poor representation. She related this to the experience of her sister, a high school physics teacher, who had recently given birth and was no longer receiving maternity pay. She explained that the unpaid labour being provided for by her sister enables society to function but goes unnoticed. The Cabinet Secretary therefore believes that maternity leave is a regular contributor to women’s lower engagement in STEM and in the workforce at large, reinstating the focus of the First Minister, Humza Yousef, on increased childcare provision for women in Scotland.

- **“So, when we think about STEM, we need to think about...experiences of maternity pay.”**
- **“...by being at home, my sister is providing that unpaid labour that holds up our society”**

**“ ...so, it’s not just a STEM problem; it’s a patriarchy problem. It’s the way our society is structured, a society that is so hugely built on the backs of women like my sister and my mum. ”**



## Dilraj Sokhi-Watson

Dilraj is the Director of Equate Scotland, which is a national policy, research and development organisation focusing on women's underrepresentation within the science, engineering, technology and the built environment industries (STEM). As programme lead, she directs the work of Equate Scotland through financial, strategic, people and policy management. Dilraj has worked in senior programme management, policy development and executive positions across a diverse range of not-for-profit organisations. Dilraj is also currently a member of Scotland's AI Alliance Leadership Group and Climate Emergency Skills Action Plan Implementation Steering Group, along with ongoing trustee responsibilities in local and international organisations.

Our second speaker was Dilraj Sokhi-Watson, the Director of Equate Scotland. Dilraj began by illustrating the number of women involved in the STEM sector, quoting that 27% of female and non-binary graduates are leaving university with a STEM degree. She then went on to highlight that this figure has remained largely unchanged since 2015, and that if the current rate of progress was to continue, we would not have parity in the STEM workforce until 2070. Dilraj also explained that this will have damaging effects on women's economic participation, as the labour market becomes increasingly dominated by STEM careers, with one million STEM jobs being created in the past seven years.

- **“When you're talking about women's economic engagement...the well-paid jobs...are done by men, and the low-paid ones are done by women; healthcare and education.”**

Dilraj then gave a myriad of reasons why women are prevented from entering STEM and/or forced to leave, as found in Equate Scotland's recent survey on women's experiences of STEM. They found that workplace culture and discrimination is a major barrier to women entering STEM, as well as contributing to the 'leaky pipeline': women entering STEM but exiting at the point where they would expect promotion. Equate Scotland have also noted that despite commendable goals relating to women in leadership roles, the data globally and locally indicates these gains not being met with more women progressing to senior roles, with ethnic minority women being particularly underrepresented. Dilraj also noted that women's health issues were a key barrier to further progression within STEM careers, as were misogyny and poor childcare provision.

- **“Women are entering STEM, but they're leaving at the point when they should become junior managers or go into leadership roles.”**

To counter these issues, Dilraj explained that Equate Scotland has a clear role to play by working with women, employers and graduates. They offer support to reskill, upskill to re-entrance to the workforce and guidance when entering or remaining in STEM through a range of programmes. Dilraj also highlighted two case studies from Equate Scotland, one which focused on [increasing women apprenticeship numbers, working with employers to improve communication](#) and another which [engaged with Ukrainian refugee women, giving them new STEM-related skills and applying for jobs in the fintech sector](#).

**“ ...according to Microsoft, globally there will be 149 million new jobs in software data and AI machine learning...where there will only be one qualified woman for every 128 roles. ”**

# Dr Holly Ferguson

Holly is a Precision Dairying Scientist based at Scotland's Rural College (SRUC), with an interest in technology use for improving animal health, welfare and production, as well as innovation. She is involved in Knowledge Exchange programmes, both within agricultural communities and across primary and secondary schools across Scotland and Cumbria.



Our next speaker was Precision Dairying Scientist, Dr Holly Ferguson. Holly began her presentation by discussing the importance of representation, explaining that through increased visibility of women scientists, further advances can be made across STEM. She highlighted that we need varied staffing across academia, as well as diverse panels at events, both contributing to a friendlier working environment for women. In relation to representation, Holly also discussed the 'Matilda Effect', which aims to emphasise the work of women and minority groups, to create a more equitable scholarly history. She stated that through this lens the curriculum can be altered to celebrate the women of science.

- **“For me, representation is key. Both for encouraging people into the sector, but also for keeping them there.”**

This concept of increased representation was also viewed as important when encouraging young women into STEM careers. Holly gave her own lived experience, stating that at school she wasn't aware of the role she is in now, proposing that engrained stereotypes about careers can be actively off-putting for children. Through her work with the Digital Dairy Chain and the Royal Highland Education Trust, Holly has been visiting schools in the hope of expanding young girls understanding of agriculture and STEM jobs, and most importantly, who can do them. She also stated that while carrying out projects with schools, she has created learning tools, which teach STEM subjects differently, particularly maths, which she believes to be important in engaging with girls.

- **“...hopefully they [children] go home with the understanding that a scientist isn't just a mad guy in a white coat, that farming doesn't mean leaning on a pitchfork in a field. And that a woman can have a job in agriculture and STEM.”**

Finally, Holly went on to highlight some of the misogyny she has faced in her role. She explained that she has been patronised, infantilised and ignored, despite her knowledge. Holly explained that this misogyny has a direct impact on scientific output, stating that the number of STEM-based research projects in 2016-17 by one UK research council, less than 7% were given to women-led groups, and of those that did receive funding, received 40% less than their male counterparts. Holly stated that to fight these behaviours we must consistently challenge discriminatory language or clear prejudice wherever possible. She believes that this must come from men, with allies playing an important role in the fight to gain women's equal representation across the STEM sector.

- **“...we need to challenge language. Don't let people talk about your 'bossy' female colleague but praise your ambitious male colleague for the same actions.”**

**“ I think the notion of being too nice or too soft as a woman to move through your career is incredibly outdated. You don't need to step on people to move upwards, and if you move up, then pull your colleagues up with you. ”**



## Angela Prentner-Smith

Angela is the Managing Director and founder of 'This is Milk', a consultancy, training and technology business. Canadian-born, Angela moved to Scotland in 2002, and since 2015, she and her team have become renowned innovators, carving out a unique niche in the digital and technology industry, including the launch of Neve Learning: a neurodiverse-first, hybrid learning platform.

Angela's commitment to fostering inclusive workplaces, challenging traditional gender roles and advocating for neurodiversity has been integral to shaping This is Milk's impressive portfolio. As well as a passionate Women's Enterprise Scotland Ambassador, Angela engages regularly with groups like AAI Employability, Flexibility Works, Glasgow Disability Alliance, Close the Gap and the ADHD Foundation.

The final speaker of the day was Angela Prentner-Smith, the Managing Director of 'This is Milk'. Angela's main focus was the concept of branding, and how it can further gender stereotypes and discrimination. She proposed that the term STEM itself was a brand, immediately associated with men, damaging moves to incorporate a larger number of women across the sectors. To evidence this, Angela performed a Google search for a software developer, showing that the majority of images incorporated blue in some way, and were of men. She believed that this subtle messaging technique, further engrains gender stereotypes, preventing women from actively engaging with STEM.

- **"...I would argue that the use of the term STEM is itself a brand. And it is a brand which is associated with men, which in itself is problematic."**

While discussing gender stereotyping, Angela highlighted that this often begins from a young age, with children exposed to expectations from birth. These expectations place strict norms on girls and boys, often pushing them into certain subjects/careers. Angela stated that this is damaging for individual welfare, but also for wider society, with STEM sectors needing creative input to further innovation. To counter this, Angela proposed that STEM should be "rebranded" to STEAM, in order to incorporate the arts. She suggested that this is more inclusive and encourages organisations to acknowledge the communication and caring elements often needed to be successful in the traditional STEM sectors.

- **"...girls have rainbows and sparkles, and the boys have dark colours and robots, from a young age we're socialising our children with the brand of STEM."**

Angela went on to explain that gender stereotyping is also causing young women to experience higher levels of anxiety, due to increased pressure to appear "perfect". She stated that due to historical expectations around women's role in society, particularly to stay within the home, women have had to prove their relevance and worth within the workplace, and thus meet perfect standards. Angela believes that this further disadvantages the STEM sectors, as much of science and technology is around experimentation and failed results, therefore women may be disheartened to persevere.

- **"...we have to work harder to prove that we should be there, we have to be perfect...We need all women to be comfortable with imperfection"**

**“ But technology, innovation and creativity all go together. Technology is not an uncreative thing; it is something that we create and solve problems with. ”**

# Discussion

After the contributions from our speakers, we opened the floor for a Q&A and, also, asked our in-person and online attendees to share their experiences of the STEM sector.

## Childcare and Maternity Leave

During discussions with women the issues of childcare and maternity leave were consistent. Women explained that the lack of childcare and flexible working was a major contributor to them leaving STEM careers. Also, they gave multiple experiences of being overlooked for promotions as a result of taking maternity leave, and some stated that they were aware of younger women not being offered jobs on account of their potential for future pregnancies. Overall, women believed that the key solutions were improved childcare facilities within workplaces, as well as equity between men and women's maternity/paternity leave.

- **“Improve childcare facilities across workplaces, women are the only ones who have to interrupt their career for parenting.”**
- **“...in an ideal world, wouldn't it be great to have mandatory maternity and paternity leave that's the exact same amount of time?”**

## Educational Establishments

While speaking with women about STEM, they believed that the role of primary and secondary education remained key in retaining future generations of girls in STEM roles. They explained that clear gender norms prevented young women from engaging with STEM subjects, and that the rigidity of the school timetable, prevented children from engaging with subjects from different spheres. They went on to state that this carried on as young people entered the world of work and further education. Women therefore proposed improved careers guidance for young women, with a wider variety of sectors explained.

- **“I was concerned about timetable choices and how they push kids to do certain things...There was a total lack of crossover...there was a total lack of career guidance as well.”**

## Misogyny

Women who had worked or studied in the STEM sectors also highlighted the issue of misogyny, explaining that they often encountered microaggressions. They gave examples of colleagues putting them down and a general assumption that women didn't belong in STEM roles. Similar issues arose in our [‘Misogyny in Scotland’](#) project, which recognised that workspaces were breeding grounds for misogynistic tropes. They proposed that improved training for all members of staff was needed to challenge engrained stereotypes.

- **“And then there are people who have chosen to not have children, and then they end up being pushed out by the microaggressions and the misogyny.”**
- **“It's sometimes hard as well when it's the micro stuff, like what's the line? If it's so small, you can't really react, because you'd be seen as overreacting...Challenging it can be really hard”**

## Role Models

Many attendees agreed with the sentiments of our speakers, stating that representation is key in increasing the number of women STEM workers. They explained that by promoting women to key decision-making positions, a greater range of viewpoints can be heard and acted upon. Some women also believed that this could be highly impactful for minority women, particularly ethnic minority women, highlighting that through better diversity, younger women would be more likely to engage with STEM sectors.

- **“Have role models. Because when people see themselves, they know they can become that person.”**
- **“We need more role models across the different STEM professions and roles.”**

# **Thank You!**

The Scottish Women's Convention would like to thank all of those who attended our conference, as well as those who contributed online and via email. We also thank our speakers for providing their wealth of knowledge and experience, as well as brilliantly contributing to our broader discussion.

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